(*op. cit.*, pl. 67, fig. 1) even though that drawing is labeled as a different species, and the inner spinose diverticle of segment 10 bears 7 or 8 setae.

The larvae and pupae of *exotica* used in this study were submitted with the type series of adults from Melrose, Illinois. Those and the specimens of *serricollis* from Norfolk, Virginia, are in the collection of the U. S. National Museum. I wish to thank Mr. W. F. Walsh, of the U. S. Department of Agriculture, in Roanoke, Virginia, for his help in obtaining the specimens of and data on *serricollis*.

The Type Locality of Gomphocerus clavatus Thomas (Orthoptera: Acrididae)[1]

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In his description of *Gomphocerus clavatus* (in recent literature *Aeropedellus clavatus*), Cyrus Thomas (1873) gave "Kansas" as the locality from which the type specimen came. This locality was apparently not questioned until 1925, Kansas being repeatedly mentioned in the range of the species prior to that time. In 1925, Hebard stated that the type specimen "was apparently mislabelled, as the species may not occur in Kansas and that specimen, showing slight thickening of the cephalic tibiae, very probably came from a high elevation in the Rocky Mountains." The species has apparently never been taken in Kansas, so Hebard's 1925 opinion was reiterated in his later papers.

Caudell, in 1903, placed *Gomphocerus carpenterii* Thomas and *G. clepsydra* Scudder in synonymy with *Gomphocerus clavatus*. Hebard, in several papers (including his review of the Gomphoceri, 1935, in which he erected the genus *Aeropedellus* that now

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includes the species in question), concurred in this view. Hebard, did, however, in 1928, suggest the possibility that the high and low altitude forms might be taxonomically distinct, in which case the name *clepsydra* would be available for the low altitude form. Recent studies by the writer demonstrate consistent differences between several populations of *Aeropedellus clavatus,* not merely those from high and low altitudes. It seems desirable, therefore, to designate the type locality with as much restriction as is consistent with the evidence.

Through the courtesy of Dr. Ashley B. Gurney, I had the opportunity a few months ago of examining in the United States National Museum the type specimen of *Gomphocerus clavatus.* The specimen, a male, formerly pinned, is now in a Riker mount. The four separate labels, apparently those that were attached to the pin, are as follows: Type/ Collection C. V. Riley/ Type No. 1036, U.S.N.M./ Stenobothrus clavatus Thos. Kansas/ This is the specimen recognized by Hebard (1927) as Thomas's type. The specimen was damaged considerably before being transferred to the present mount. It lacks both antennae, the structures on which the trivial name was based. Both metathoracic legs are missing; and, although the prothoracic legs are present, they are separated from the rest of the specimen.

In the original description, Thomas inserted the name "Dodge" in parenthesis after the locality. This referred to the collector, undoubtedly Charles R. Dodge, from whom Thomas received specimens collected by Dodge on a trip to the Rocky Mountains in the summer of 1871. The type specimen of *Caloptenus Dodgei* of Thomas (= *Melanoplus dodgei*) was collected on that trip. Its type locality was given in the description (Thomas, 1871) as "Pike's Peak, Colorado Territory," and in the final paragraph of the original description the altitude was stated as "about 10,000 feet above the level of the sea." The type specimen (U.S.N.M. No. 727) bears the data "Pike's Peak Col. Ter. 1871." It seems more than probable that the type of *Gomphocerus clavatus* was collected at about the same locality on the same trip (or probably at a little higher elevation, for both species occur commonly above timber line on Pikes Peak).

We know that Dodge collected on Pikes Peak; we have no evidence that he collected elsewhere in the Rocky Mountains. The locality label "Kansas," which is an error, may have been the result of a mistake in labelling or it may have been the careless use of a name that would have been valid a few years earlier. (Kansas Territory, a few years prior to Dodge's trip, did include Pikes Peak.) The likely explanation is that the label was added from memory, some time after Dodge left Colorado on his way east.

In recent comparisons of large series of specimens from scattered populations of *Aeropedellus clavatus* throughout the west my early impression that various populations are distinct was confirmed. It is apparent, for example, that one can distinguish between specimens from Pikes Peak and those from other alpine areas in Colorado. (It is noteworthy, of course, that the alpine areas of Pikes Peak are isolated from other similar areas in the Rockies.) With this in mind it occurred to me that a comparison of significant dimensions of the type specimen with corresponding ones from specimens of various populations, including the population on Pikes Peak, would give us further evidence for the locality from which the type came. In these comparisons, I have found two morphological ratios of more value in characterizing populations than absolute dimensions, although absolute size is quite significant in distinguishing low altitude (larger) specimens from those at high altitudes. The ratios used are: (a), length of the anterior tibia divided by its maximum width; and (b), length of the terminal seven antennal segments divided by the maximum width. (Although the antennae of the type are missing, we have Thomas's statement that the knob involved the last seven segments.) Both tibia and antenna, or either, or neither may be noticeably swollen in the individuals of certain high altitude populations.

In the accompanying table, dimensions (in millimeters) and ratios of dimensions from the type are compared with series of the same sex from various Colorado populations. The length of the type is my measurement. Thomas gave .56 in. for this figure, definitely an error, as was pointed out by Caudell (1903). I have used the dimension Thomas gave for the length

of the hind femur because that structure is missing and his measurement is a probable one. The figures given for the populations are the means and extremes of the numbers examined from each population. Examination of the table shows that the type could have come from the Pikes Peak population. All its dimensions are within the range for that population. It is extremely unlikely, however, that the type came from an alpine population further north (Mount Evans), an alpine population further south (Trinchera Peak), or a foothills population (Boulder). In each case, overall size, combined with the ratio of width to length of the anterior tibia, characterizes a distinct population.

I therefore propose that Pikes Peak, Colorado, at an elevation of 10,000 feet and above, be recognized as the type locality for *Gomphocerus clavatus* Thomas. The grounds for this proposal

TABLE 1.—Means (and Extremes) of Measurements and Ratios from Males of Various Colorado Populations of *Aeropedellus clavatus* (Thomas) Compared with the Same Data from the Type of *Gomphocerus clavatus*. Measurements are in Millimeters. Ratios are L, Length, Divided by W, Width

	Total Length	Pronotum Length	Hind Femur Length	Anterior Tibia L/W	Antennal Knob L/W
Type of *Gomphocerus clavatus*	17.6	3.3	10	6.1	lost
Pikes Peak 12,900′ 20 males	17.1 (15.5–18.5)	3.7 (3.2–4.0)	10 (9.5–10.5)	5.8 (5.3–6.2)	2.2 (1.8–2.8)
Mount Evans 13,100′ 26 males	17.7 (16.7–18.5)	3.8 (3.4–4.1)	10.4 (9.6–11.0)	4.2 (3.7–4.8)	1.9 (1.6–2.4)
Trinchera Peak 12,000′ 15 males	15.8 (14.8–16.7)	3.5 (3.3–3.8)	9.8 (9.3–10.4)	4.7 (4.4–5.0)	2.4 (2.2–2.6)
Boulder, Colo. foothills 5,800′ 20 males	19.1 (18.2–20.7)	3.7 (3.5–4.0)	11.5 (10.9–11.9)	6.9 (5.9–7.9)	3.0 (2.3–3.8)

are three: 1. The validity of Hebard's statement that the locality label was incorrect because the species is unknown in Kansas and because the morphology of the type specimen suggests that it came from high up in the Rocky Mountains. 2. The collector of the type, Charles R. Dodge, collected on Pikes Peak in 1871, and his specimens were available to Thomas. 3. The morphological pattern of the type specimen corresponds with the pattern of specimens from the Pikes Peak population but not with the pattern of specimens from other Colorado populations.

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